

CLAIMS

1. A fluid conveying machine comprising:
a rotational shaft;
5 a double suction type pump having a double suction type impeller attached to said rotational shaft, a pump casing disposed so as to surround said impeller, and a pressure balance mechanism for positioning said rotational shaft in an axial direction; and
at least one magnetic levitation motor having a function as a radial magnetic bearing for supporting said rotational shaft in a non-contact manner and a function as a
10 motor for rotating said rotational shaft.
2. The fluid conveying machine as recited in claim 1, wherein said pump is disposed substantially at a center of said rotational shaft in the axial direction,
wherein two magnetic levitation motors are disposed on both sides of said pump.
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3. The fluid conveying machine as recited in claim 1 or 2, wherein said pump casing having a double volute.
4. The fluid conveying machine as recited in claim 1 or 2, wherein said pump
20 casing having a diffuser.
5. The fluid conveying machine as recited in claim 1 or 2, wherein said pressure balance mechanism has a pair of variable clearances between each side of said impeller and said pump casing to balance pressures on both sides of said impeller by sizes of said
25 pair of variable clearances.
6. The fluid conveying machine as recited in claim 1 or 2, wherein said magnetic levitation motor includes

a stator for forming two rotating magnetic fields, numbers of poles of which are different from each other by two, and

a rotor rotated and magnetically supported by said two rotating magnetic fields.